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ABSTRACT

Most of the observational study of marriage has focused on relatively young and highly educated couples from professional backgrounds. Very little is known about the generality of this observational research to couples whose marital philosophies have been influenced by a different array of socioeconomic conditions and secular trends. Satisfied and dissatisfied married couples (N=120 couples) from blue- and white-collar social classes participated in an observational study of marriage. Of these, blue-collar couples (N=28), divided equally among the maritally satisfied and dissatisfied, tape-recorded a problem-solving discussion in their homes. Tapes were then coded for problem-solving content and for nonverbal affect using the Couple's Interaction Scoring System. The findings revealed that: (1) the agreement and proposal codes emerged as the best predictors of negative affect; (2) the responses of the wives were implicated more than those of the husbands in the differential levels of negative affect in working-class marriages; and (3) the degree of emotional linkage in the dyad over time varied directly with the level of negative affect in the interaction. These results suggest that the same interactional style involved in the dysfunction of white-collar marriages operates in the blue-collar world. (NRB)

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Anatomy of Negative Affect in Working-Class Marriages

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The last twelve years has witnessed major technological and methodological breakthroughs in the observational study of marriage. These breakthroughs include the development of reliable methods for coding problem-solving and nonverbal communication in marriage (e.g., Gottman, 1979; Hops, Wills, Patterson, & Weiss, 1972), and the application of sequential analysis and time-series methods to the statistical analysis of observational data (e.g., Gottman, 1979; Notarious, Krokoff, & Markman, 1981). The major contribution of observational methods to our understanding of marital relationships has been to identify the specific interaction sequences that differentiate well-functioning marriages from those that are not. In particular, this research has led to a model of communication in well-functioning marriages that focuses on the way spouses express their feelings about problems and reach a consensus (e.g., see Krokoff & Gottman, 1983). The influence of this research is reflected in the growing numbers of marital therapies, enrichment workshops, and self-help books whose aim it is to teach couples more effective strategies for communicating about their disagreements.

These contributions not withstanding, there remains the possibility that observational research has managed to portray what interactions are like in only one type of well-functioning marriage. In reviewing the observational literature, I was struck by the fact that most of this research has been

conducted with relatively young and highly educated couples from professional backgrounds. Currently, we know very little about the generality of observational research to couples whose marital philosophies have been influenced by a different array of socioeconomic conditions and secular trends. I therefore decided to design an observational study that employed random sampling techniques to recruit couples, and that sampled from both happily and unhappily married couples in both white-collar and blue-collar occupations.

Today's talk represents an interim report on the status of this project. In particular, I will present the results of a study by Krokoff (1984a) that assessed the interaction and cognitive styles related to the level of negative affect in working-class marriages.

Method

Subjects

A multi-stage procedure described by Krokoff (1984b) was used to recruit couples for this study. The first stage involved a random telephone survey of over 3,000 households in the twin cities of Champaign-Urbana, Illinois. The interviews were conducted by the Survey Research Laboratory of the University of Illinois. Detailed marital and demographic information were obtained at this time. I was very pleased that approximately ninety percent of the eligible respondents completed the telephone survey.

The goal of the next two stages of recruitment (i.e., recruitment mailings and home visits) was to obtain (from the telephone sample) a large sample of 120 couples who would complete all other parts of the study. These parts included the oral history interview, videotaping in the laboratory, audiotaping at home, and a detailed battery of questionnaires. The 120 couples filled four cells of a 2 x 2 factorial design, with two levels of social class, blue-collar and

white-collar, and two levels of marital satisfaction, satisfied and dissatisfied. Today I will focus on the home tapes for the blue-collar sample.

In particular, the subjects in this study consisted of twenty-eight working-class couples, divided equally among the maritally satisfied and dissatisfied. Designations of blue-collar status were based on a convergence of occupational and educational criteria. To be included in this group, the main wage earner had to be employed in one of the four blue-collar categories (i.e., farming; precision production, craft, and repair; operator, fabricator, or laborer; service) listed on the U.S. Bureau of the Census (1980) Occupational Classification System. Also, none of the spouses in the blue-collar group had completed college. Designations of marital satisfaction were based on the standard cut-off scores for the Locke-Williamson Marital Relationship Inventory (MRI) (see Burgess, Locke, & Thomes, 1976); i.e., those couples in which at least one of the spouses MRI scores fell below a criterion score of 85 were classified as maritally dissatisfied, whereas those couples in which both spouses MRI scores fell above a criterion score of 102 were classified as maritally satisfied.

Table 1 presents a breakdown of the demographic characteristics of the sample.

Coding Audiotapes

Each of the 28 couples tape-recorded a problem-solving discussion in the home. For this task, the couple was asked to try and come to a mutually satisfying resolution to a troublesome problem in their marriage (in fifteen minutes). The audiotapes were later coded for problem-solving content by one group of coders and for nonverbal affect by a second group using the Couple's Interaction Scoring System (CISS) (Gottman, 1979). Table 2 presents a

description and example of every problem-solving code. The nonverbal affect accompanying each statement was also coded as either positive, negative, or neutral using a set of voice cues described by Gottman (1979).

Reliability was assessed using a stringent reliability procedure that tied reliability to both the specific coding unit and the specific code. Table 3 presents the Cohen kappa reliability coefficient for every code in the study. Cohen's kappa assesses interobserver agreement beyond that which would be expected by chance alone (e.g., Cohen, 1960). The mean value of kappa in this study was .74. Furthermore, the results of Fleiss, Cohen, and Everitt's (1969) test for kappa indicated that ten of the eleven coefficients were statistically significant ($p < .001$).

Cronbach alpha coefficients were also high in this study (see Table 4). The mean value of alpha was .96. Cronbach's alpha assesses the generalizability of a coding system across coders. It is an interclass correlation coefficient that is obtained with a repeated measures analysis of variance model (see Wiggins, 1973). A high Cronbach alpha for a particular code indicates that most of the variance is accounted for by variance in agreement across couples rather than across coders or by coder-by-couple interaction.

Because the kappa and alpha coefficients for the summarizing-other code were low, this code was dropped from the study.

Independent Variables

After the reliability assessments, the interaction codes were subjected to proportional, sequential (e.g., Sachett, 1977) and bivariate time-series (e.g., Gottman, 1981) analyses. These analyses generated a set of process variables that served as the independent variables in this study. For example, the sequential analysis (which was performed dyad by dyad) generated a set of lag 1

Z-scores that assessed the strength of the connection between two codes, such as in the cross complaining sequence, where spouses exchange complaints about a problem. For example:

W: I'm tired of spending all my time on the housework.

H: If you used your time more efficiently, you wouldn't be too tired.

The bivariate time-series method provided two sources of information about emotional linkage in the dyad over time: first, it assessed the degree to which changes in the wife's affect were predicted by (or responsive to) changes in the husband's affect [$Z(TS_h \dashrightarrow TS_w)$], and second, it assessed the degree to which changes in the husband's affect were predicted by (or responsive to) changes in the wife's affect [$Z(TS_w \dashrightarrow TS_h)$].

The bivariate method was also used to assess an asymmetry in emotional responsiveness between the husband and wife. What I mean by this is the following: If the wife's behavior is more predictable from the husband's behavior than the converse, then we say the husband is less responsive than his wife. To explain this concept consider the alpha monkey (who is dominant) and the beta monkey (who is subordinate). The beta keeps his eye on the alpha, always aware of the alpha's movement and responsive to the alpha. The alpha monkey, on the other hand, essentially ignores the beta. The beta's behavior is much more predictable from the alpha's behavior than the other way around.

Criterion

The interaction codes were also used to generate the dependent measures for this study. In particular, the level of negative affect in the couple's interaction served as the criterion of marital distress in this study. Why negative affect? Negative affect is the single most important variable that has been implicated in the observational study of marriage in the last decade. It

bears a strong empirical relationship to couples' marital happiness (e.g., Billings, 1979; Margolin & Wampold, 1981; Schapp, 1981), as well as to the level of physiological stress and health problems people experience in their marriages (e.g., Gottman, 1983; Gottman & Levenson, in press). In light of past observational research, negative affect was defined as the proportion of disagreement codes (DG) plus negative nonverbal codes (V-). The negative affect criterion was calculated separately for the husband, p (HDG) + (HV-), and wife, p (WDG) + p (WV-). Now on to the results .

Results and Discussion

Table 5 presents the interactional variables implicated by this study. The findings fall into three major categories.

First, in terms of the overall proportions of the different interaction codes, the agreement and proposal codes emerged as the best predictors of negative affect. Both variables varied inversely with the level of negative affect in the couples' interactions. These findings indicated that as the level of negative affect increased, husbands and wives were less likely to both acknowledge their partners' points of view and offer proposals for resolving their problems.

Second, the results of the sequential analysis implicated the responses of the wives (more than those of the husbands) in the differential levels of negative affect in working-class marriages. For example, the wives' negative affect varied directly with both the wives' cross-complaining sequences and the wives' counterproposal sequences. As I mentioned earlier, in the cross-complaining sequence, the wife reciprocates her husband's complaint with a complaint of her own. In the counterproposal sequence, the wife responds to her husband's proposal for resolving a marital problem by offering a proposal of her

own. These findings are consistent with previous observational research (e.g., Gottman, 1979). Past research has shown that in nondistressed marriages it is the wives, and not the husbands, who take responsibility for the de-escalation of conflict during problem-solving discussions. (On low conflict tasks, such as discussions of the day's events, husbands take more responsibility for de-escalating conflicts.)

Third, the findings for the time-series analysis indicated that the degree of emotional linkage in the dyad over time varied directly with the level of negative affect in the interaction. These findings indicated that at higher levels of negative affect the reactions of spouses vis a vis their partners became more predictable. This finding is consistent with previous family research showing greater interactive structure in distressed families compared to nondistressed families (e.g., Haley, 1964; Ting-Toomey, 1982).

Furthermore,the findings for the time-series data revealed that an asymmetry in emotional responsiveness between a husband and wife [$Z(TS_h \dashrightarrow TS_w) - Z(TS_w \dashrightarrow TS_h)$] was also directly related to the level of negative affect in the interaction. In particular, this study found that the more responsive the wives were to changes in their husbands affect than the other way around, the more negative the wives were on the problem-solving task. This finding suggests that negative affect is highest in those interactions where - like the alpha and beta monkeys - a responsive wife is essentially ignored by her husband. This finding is also consistent with Lillian Rubin's (1976) qualitative research on working-class families. Rubin viewed the husband's emotional withdrawal as both a reaction to - and a cause of - his wife's negative affect escalation.

In addition to the interaction processes I have just described, the present study found that the spouses' cognitions about their relationships were also

related to the level of negative affect. In particular, this study found that a set of questionnaires tapping the wives' perceptions of the companionate aspects of their relationships were related to their husbands' negative affect. Table 6 presents the correlations of the cognitive variables with the negative affect criteria. I will summarize the four major findings involved here:

> First, the wives' ratings of their loneliness in marriage varied directly with their husbands' negative affect on the problem-solving task.
>
> Second, the wives' negative reactions to conflict resolution also varied directly with their husbands' negative affect. The wives' negative reactions were measured by their endorsement of items, such as "I feel cold and empty after an argument."
>
> Third, the wives' ratings of their husbands' emotional expressiveness and responsiveness varied inversely with the husbands' negative affect; i.e., husbands who were more negative on the problem-solving task, were perceived (by their wives) as being less expressive and responsive.
>
> Fourth, the wives' expectations for communication in their marriages also varied inversely with their husbands' negative affect; i.e., the more negative the husbands were on the problem-solving task the less intimacy the wives expected from their marriages.

By comparison, the husbands' ratings along these four dimensions of companionship bore no statistically significant relationships ($p < .10$) to their wives' negative affect.

These findings implicate (for wives) the friendship component of marriage. Observational research in the last 10 years has taught us a great deal about how couples resolve their differences. However, we currently know very little about how couple's become friends, as well as maintain and restore the companionate aspects of their relationships.

Conclusion and Summary

In summary, the present study extended the observational study of marital problem-solving to working-class couples. The interaction and cognitive style implicated by this work accounted for almost seventy percent of the variation in both the husband and wife negative affect criteria (Table 7 presents the results of step-wise multiple regressions for the negative affect criteria). In fact, all of the interactional processes implicated by this study were previously implicated by observational research with white-collar couples. The results of the present study therefore suggest that the same interactional styles involved in the dysfunction of white-collar marriages generalize to the blue-collar world.

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TABLE 1. BREAKDOWN OF THE SAMPLE CHARACTERISTICS (N = 28)

Variable	M	SD	Range
Wife age (years)	41.39	13.94	21-69
Husband age (years)	43.07	14.16	21-75
Wife education (years)	11.14	2.10	5-1[illegible]
Husband education (years)	11.78	1.81	6-15
Years married	18.07	13.31	1-44
No. children	2.04	1.53	0-6
Duncan SEI[a]	22.93	8.11	14-46

[a]Duncan's (1961) Socioeconomic Index of Occupational Prestige. Also, 42.86% of the main wage earners were employed in Precision Production, Craft, or Repair occupations (on the 1980 U.S. Bureau of the Census Occupational Classification System); 32.14% were employed in the Operators, Fabricators and Laborer's category; 14.29% were employed in the Service category; 10.71% were employed in the Farming category.

TABLE 2. DESCRIPTIONS AND EXAMPLES OF THE COUPLE'S INTERACTION SCORING SYSTEM (CISS) PROBLEM-SOLVING CODES

Code	Description	Example
AG	Agreement	Yeah, you're right.
DG	Disagreement	No, because it's too late. Yes, but ...
CT	Communcation talk; i.e., commenting on the process of the interaction	We're getting off the issue.
MR	Mindreading; i.e., attributing thoughts, feelings, motives, attitudes or actions to spouse	You always get mad in those situations.
PS	Proposing a solution	Let's take out a loan.
SO	Summarizing-other	What you're saying is I drink too much.
SS	Summarizing-self	I told you. I'm not going.
PF	Problem information or feelings about problems	The problem is that we don't have enough money.

TABLE 3. COHEN'S KAPPA (K) FOR CISS CODES: CRITICAL SUMMARIES OF FLEISS (1971) STATISTICAL TEST FOR KAPPA COEFFICIENTS.

Code	Frequency	K	SE_K[a]	K/SE_K[b]
Agreement	1032	.895	.030	29.833***
Disagreement	659	.789	.033	23.909***
Communication talk	496	.910	.041	22.195***
Mindreading	150	.506	.067	7.552***
Proposals	2888	.847	.038	22.289***
Summarizing-self	28	.705	.147	4.796***
Summarizing-other	7	.305	.207	1.473
Problem-Information, Feelings	438	.713	.042	16.976***
Positive voice	419	.748	.061	12.262***
Neutral voice	4430	.664	.089	10.236***
Negative voice	1174	.609	.034	17.912***

[a]Standard error of Kappa

[b]critical z-score for two-tailed analysis at $p < .001$, confidence level = 3.291.

TABLE 4. CRONBACH ALPHAS (α) FOR CISS CODES; CRITICAL SUMMARIES OF REPREATED MEASURES ANALYSIS OF VARIANCE.

Code	Frequency	Mean Square Subjects	Mean Square Residual	α^a
Agreement	1032	19055.16	103.42	.989
Disagreement	659	7755.02	94.28	.976
Communication talk	496	4357.79	30.49	.986
Mindreading	150	412.57	10.46	.951
Proposals	2888	150282.16	403.98	.995
Summarizing-self	28	13.02	1.57	.785
Summarizing-other	7	0.88	0.21	.615
Problem information, feelings	438	3457.14	57.55	.967
Positive voice	419	3060.64	69.79	.955
Neutral voice	4430	349970.16	709.05	.996
Negative voice	1174	242528.29	127.84	.990

$$^a\alpha = \frac{MS_{subjects} - MS_{residual}}{MS_{subjects} + (N_i - 1)\, MS_{residual}},$$

where N_i = Number of conditions

TABLE 5. CORRELATIONS OF THE INTERACTION VARIABLES WITH THE NEGATIVE AFFECT CRITERIA.

Variable	Husband Negative Affect	Wife Negative Affect
Proportional Variables		
Husband agreement	-.58***	-.44**
Wife agreement	-.53**	-.70***
Husband proposals	-.49**	-.55**
Wife proposals	-.57***	-.34*
Wife mindreading	-	-.29[a]
Wife communication talk	-	.43**
Sequential Analysis Variables		
Wife cross-complaining	-	.38*
Wife counterproposals	-	.34*
Time-series Variables		
Emotional Linkage		
$Z(TS_n \dashrightarrow TS_w)$	-	.28[a]
$Z(TS_w \dashrightarrow TS_n)$	.32*	.27[a]
Asymmetrical Responsiveness		
$Z(TS_n \dashrightarrow TS_w) - Z(TS_w \dashrightarrow TS_n)$	-	.29[a]

*** $p < .001$
** $p < .01$
* $p < .05$
[a] $p < .10$
- not significant at $p < .10$

TABLE 6. CORRELATIONS OF THE COGNITIVE VARIABLES WITH THE NEGATIVE AFFECT CRITERIA IN THE PROBLEM-SOLVING TASK.

VARIABLE	Husband Negative Affect	Wife Negative Affect
Expectations for Communication		
Husband	-.12	-.12
Wife	-.42*	-.18
Loneliness in Marriage		
Husband	.23	.15
Wife	.38*	.20
Spouse's Expressiveness/Responsiveness		
Husband	-.28[a]	-.22
Wife	-.45**	-.22
Negative Reactions to Conflict Resolution		
Husband	.29[a]	.20
Wife	.52**	.44**

**$p < .01$

*$p < .05$

[a]$p < .10$

TABLE 7. RESULTS OF STEP-WISE MULTIPLE REGRESSIONS FOR NEGATIVE AFFECT CRITERIA.

Husband Negative Affect	R^2	Wife Negative Affect	R^2
H Agreement	.331	W Agreement	.489
H Proposals	.539	W Communication Talk	.589
W Expressiveness/ Responsiveness	.625	H Agreement	.632
W Communication Expectations	.652	Z (TSh -->TSw)	.664
W Proposals	.680	W Mindreading	.691
$R = .82$		$R = .83$	
$R^2 = .68$		$R^2 = .69$	
$F = 9.35$, $p < .001$		$F = 9.84$, $p < .001$	